



The State of New Hampshire
Department of Environmental Services



Robert R. Scott, Commissioner

February 12, 2019

The Honorable Suzanne Smith
Chair, House Resources, Recreation and Development Committee
Legislative Office Building, Room 305
Concord, NH 03301

RE: HB 261 - requiring the commissioner of the department of environmental services to revise rules relative to arsenic contamination in drinking water

Dear Chair Smith and Members of the Committee:

Thank you for the opportunity to testify on HB 261. As introduced, this bill would require the commissioner of the New Hampshire Department of Environmental Services (NHDES) to revise the ambient groundwater quality standard (AGQS) and the drinking water maximum contaminant level (MCL) for arsenic to a value not to exceed 0.5 parts per billion. NHDES has concerns with the bill as introduced, but we understand that the prime sponsor intends to introduce an amendment that would require NHDES to initiate rulemaking pursuant to its existing authorities to revise the AGQS and the MCL for arsenic to a value not to exceed 5 micrograms per liter (5 parts per billion – ppb). The amended bill would also amend Chapter 190:1 of Laws of 2018 (HB 1592) to delete the provision that any proposed change to the AGQS for arsenic would require the approval of the General Court. If HB 261 is amended in this fashion, NHDES would fully support the bill.

Last year, HB 1592 directed NHDES to “review the ambient groundwater standard for arsenic to determine whether it should be lowered, taking into consideration the extent to which the contaminant is found in New Hampshire, the ability to detect the contaminant in public water systems, the ability to remove the contaminant from drinking water, the impact on public health, and the costs and benefits to affected entities that will result from establishing the standard.” NHDES completed the required review during the summer and fall of 2018, and submitted its report to the chairs of this committee and the Senate Energy and Natural Resources Committee on December 31, 2018.

NHDES’ report includes a recommendation and proposal that rulemaking be initiated to lower the AGQS for arsenic to 5.0 micrograms per liter (5.0 ppb) and to lower the MCL for arsenic to 5.0 micrograms per liter (5.0 ppb) as a running annual average.” As outlined in the report, NHDES believes that lowering the standard to 5.0 ppb will result in significant and lasting public health benefits that outweigh the costs of compliance with the new standards. A copy of the summary section of the report is attached for reference.

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In summary, we anticipate that the bill sponsor will introduce an amendment to HB 261 that has the full support of NHDES. Thank you again for the opportunity to comment on this bill. Should you have further questions or need additional information, please feel free to contact either Sarah Pillsbury, Administrator, Drinking Water and Groundwater Bureau, (sarah.pillsbury@des.nh.gov, 271-1168) or Paul Susca, Supervisor, Planning, Drinking Water and Groundwater Bureau (paul.susca@des.nh.gov, 271-7061).

Sincerely,



Robert R. Scott
Commissioner

cc: Sponsors of HB 261: Representatives Grassie, Adjutant, Cushing, and Murphy

Attachment: Summary section (3 pp) of NHDES report R-WD-18-20, "Review of the Drinking Water Maximum Contaminant Level (MCL) and Ambient Groundwater Quality Standard (AGQS) for Arsenic"

Excerpt from NHDES report R-WD-18-20, "Review of the Drinking Water Maximum Contaminant Level (MCL) and Ambient Groundwater Quality Standard (AGQS) for Arsenic"

<https://www.des.nh.gov/organization/commissioner/pip/publications/documents/r-wd-18-20.pdf>

1. SUMMARY

1.1 Background

Chapter 190, New Hampshire Laws of 2018 (House Bill 1592), effective June 8, 2018, directs the New Hampshire Department of Environmental Services (NHDES) to "review the ambient groundwater standard for arsenic to determine whether it should be lowered, taking into consideration the extent to which the contaminant is found in New Hampshire, the ability to detect the contaminant in public water systems, the ability to remove the contaminant from drinking water, the impact on public health, and the costs and benefits to affected entities that will result from establishing the standard." Any new ambient groundwater quality standard (AGQS) for arsenic would, in effect, also establish a new drinking water standard (maximum contaminant level – MCL) for arsenic, since public water systems must comply with AGQSs for contaminants that they are monitoring, under New Hampshire Administrative Rule Env-Dw 707.02(b). The AGQS of 10 parts per billion (ppb) applies to facilities that discharge to groundwater. The MCL of 10 ppb applies to public water systems (PWSs) that serve residential populations (community PWSs) and to non-community PWSs that serve the same 25 or more people each day for at least six months of the year, such as schools and places of work with their own wells. Compliance with both the AGQS and MCL are determined on the basis of a running annual average where monitoring is done quarterly, or with annual monitoring at sites with results less than half the standard.

Arsenic is naturally occurring and quite common in New Hampshire's groundwater, and health studies of New Hampshire residents have demonstrated the connection between arsenic and the increased prevalence of conditions including bladder and other cancers and developmental effects on children. More than one-third of community PWSs in New Hampshire have a measurable amount of arsenic in their water. The U.S. Environmental Protection Agency (EPA) typically sets MCLs for drinking water contaminants at a level at which a lifetime of exposure would result in one excess cancer in one million people exposed. However, EPA makes exceptions for contaminants for which the technology is not readily available to detect the contaminant at extremely low levels or to remove the contaminant (treat the water) to such low levels, or when the cost of compliance with a lower standard would be very high. For some contaminants, EPA has established drinking water MCLs with cancer risks in the 10-in-a-million to 100-in-a-million range. The 10 ppb MCL for arsenic is associated with a far greater risk – 3,000 in a million (roughly 1 in 300) – based on the health effects information available in 2001 when the standard was set. Water systems have been required to meet the new standard since January 23, 2006.

In 2003, EPA began the process of updating the 1988 Toxicological Review upon which the 10 ppb MCL was based. Since then, evidence has continued to mount about the health effects of arsenic at low levels (less than 10 ppb) of exposure. EPA currently expects to complete the review of a revised assessment

scope (by the National Academy of Sciences) in 2019, with completion of the risk assessment itself expected in 2021.

The only state that has adopted a standard other than EPA's 10 ppb is New Jersey. In 2003, the State of New Jersey's Drinking Water Quality Institute recommended an arsenic standard of 3 ppb, based on the feasibility of laboratory analytical methods and water treatment technology, but unlike EPA, did not explicitly balance the cost of treatment with the benefit of the reduced health risk. Citing reservations about some of the water treatment methods available to attain the recommended 3 ppb standard, the New Jersey Department of Environmental Protection (NJDEP) adopted a drinking water standard of 5 ppb, which it has been enforcing since 2006. According to NJDEP's most recent report on Public Water Systems, there were no violations of the 5 ppb MCL during 2017 among the state's 582 community and 717 non-transient, non-community water systems.

1.2 Recommendation

After considering a number of factors as outlined in the Rationale section below, NHDES recommends and proposes that rulemaking be initiated to lower the AGQS for arsenic to 5.0 micrograms per liter (5.0 ppb) and to lower the MCL for arsenic to 5.0 micrograms per liter (5.0 ppb) as a running annual average.

1.3 Rationale

While the costs of compliance with drinking water and groundwater standards of 5 ppb for arsenic would be substantial, the tangible and intangible benefits to public health warrant the recommended reduction. Information gathered and analyses performed for this review enable NHDES to estimate some of those costs and benefits. At the outset, NHDES focused this review on a range of potential MCL/AGQS standards from 3 to 6 ppb, but by the conclusion of the review, determined that both the costs and benefits of a 5 ppb standard could be addressed with greatest confidence. The rationale for NHDES' recommendations is summarized below:

- Exposure to inorganic arsenic in drinking water and food at levels below the current MCL of 10 ppb has been shown to increase the risk of a wide range of adverse health effects, including lung, bladder and skin cancer; cardiovascular disease; adverse birth outcomes; illnesses in infants; and reduced IQ. (Section 5.1 of this report)
- For some of these adverse health effects, it is possible to estimate the magnitude of the reduction in risk associated with reducing the MCL from 10 to 5 ppb. In this category are lung, bladder and skin cancer. These are the health effects that were taken into account when EPA set the current MCL at 10 ppb. (Tables 4-6)
- For some additional health effects, convincing information is now available regarding the increased risk in the 5-10 ppb range, but the available information does not make it possible to confidently estimate the number of cases or deaths that could be avoided by lowering the MCL. In this category are adverse birth outcomes, illnesses during the first year of life, and deaths from cardiovascular disease (CVD).

- CVD is of particular interest due to the number of people affected and the evidence that arsenic in the 5-10 ppb range is likely to substantially increase the risk of death from this cause. (Section 5.1)
- The potential for arsenic above 5 ppb to lower the IQ of school children is of great concern, but the available evidence does not enable estimates of the number of children affected with any degree of confidence. However, the potential life-long impact on children must be considered.
- NHDES considered both the tangible (economic) and intangible costs to those affected by the health risks mentioned above.
- Water treatment technologies that are currently used to treat drinking water are capable of reliably maintaining an average arsenic level of 5 ppb, and in many cases lower than that. For a few water systems (those using greensand treatment) relatively minor adjustments in treatment processes can achieve 5 ppb or less. For the vast majority of water systems (those currently using or likely to use adsorption) achieving lower arsenic levels is a matter of replacing their treatment media more frequently. For a substantial number of water systems, maintaining an average arsenic concentration below 5 ppb would not be feasible. This review includes estimates of the costs associated with these changes. (Tables 1 and 2)
- Lowering the groundwater standard (AGQS) from 10 ppb to 5 ppb would affect an estimated 46 municipal landfills, increasing the cost of groundwater monitoring and treatment. Also affected would be an estimated 40 sites with groundwater discharge permits (sewage and septage lagoons, wastewater discharges), which would need to install and operate additional monitoring wells, and treatment systems for private wells. (Table 3)
- Nearly all laboratories that are currently accredited to test for arsenic in public water systems are already able to reliably measure arsenic at levels low enough to ensure that public water systems and other regulated facilities maintain compliance with an MCL and AGQS of 5 ppb.